Color Detection

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ABSTRACT—

The method for recognising colour shades with a perfect forecast of their names is the goal of this application. According to a study, a typical person is able to distinguish between around 1 million different colour tones. Nonetheless, a person with "enchroma" may be able to distinguish 10,000 hues, or 1%, more than a typical person. Painting pictures requires a painter to precisely identify colour patterns; otherwise, the reality of the image is obscured. In the program the R, G, B values of colors are to be compared with the that of the image and then display the name of the color that will be easily visible to the user, this system can help in knowing the colors to normal people (especially men) and hence this system can be very useful and it do have the future use for like connecting this system in the goggles or specs and also in helmet for those driving motorcycle

*Keywords— Android studio, Java, Color detector*

I. Introduction

This document is written with an intention to note down the self-learning and reflection throughout this project planning phase. It gives a glimpse of various things which we learnt or experienced through this project planning phase, the issues or difficulties we encountered and how we reflected on the same. We, being an aspiring Computer Engineers, strongly believe that Technology field is one of those fields where no matter how many books we read, lectures we listen, courses we undertake, workshops we participate, we won't be able to excel in any aspect of technical terms, unless and until we have a hands-on experience. Throughout the tenure of our diploma course, we learnt various subjects and topics, various programming languages like C, C++, Java, Advance Java, HTML and CSS. Not just this, we also learnt some important topics like Software Development and Software Testing. We consider this entire Capstone Project as an opportunity to implement all that we have learnt so far, and develop a decent software, be it a website, a mobile application or any software.

II. PROBLEM DEFINITION

An important challenge in color detection and similar technologies is the ability to handle all those situations where subjects (whose color is to be detected) are not in close range and hence color cannot be differentiated and hence detection becomes tough and may lead to wrong results or no results. There are many factors that make the color detection easy or tough.

III. METHODOLOGY

Image Capture: The first step is to retrieve a high-resolution, high-quality image. ACTION PICK() is a method that we utilise to load a picture from a file. The picture must be in the working directory or the pickImage() method must use the entire path to the image. Extraction of RGB Colors: At this step, the three layered colours from the input image are extracted. Red, green, and blue light are used in combination to create all of the colour images on screens, including those seen in televisions, computers, laptops, and mobile devices. To display an image Bitmap bitmap = Bitmap.createBitmap() method is used By using getDrawingCache() and setDrawingCacheEnabled functions, You can discover the name of the hue and its degree of intensity. An open-source library for image processing is used in this. It is a crucial component of modern computer systems and plays a significant role in real-time image operation. By utilising this software, the user can process images, recognise objects, and this library is continually evolving as a result of its capacity to consistently carry out more challenging tasks related to processing images, etc. The project's capacity is demonstrated by the architecture above. It comprises of an abstracted sequence diagram from the source code that is well described. It makes use of technology's extensive capabilities, like the Java library in Android. Based on comparable ideas and qualities, the aforementioned architecture improves process efficiency. Red, Green, and Blue are the primary colours that can be combined to create other hues, as is common knowledge. The current colour detection project uses an image's path as input and scans it for the composition of the primary colours red, green, and blue.
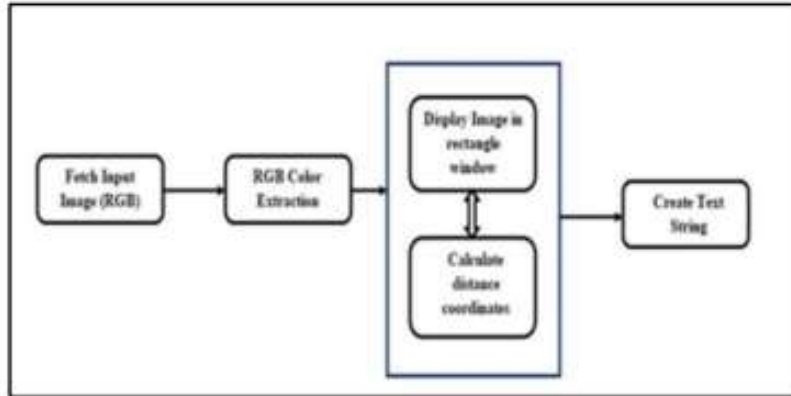
Fig.-1: System Architecture

Hardware/Software Requirements:

- •We shall be requiring below mentioned Hardware to ensure smooth processing anddevelopment experience: Desktop or Laptop, Processor i5 or above, minimum 8GB RAM,

- Windows operating system

- •The technology stack/software which we shall be requiring are as below: Visual Display Unit 800*600 colors (Min.) The platform for executing the code for ColorDetection. We used: Android Studio.

Platform used:

Android Studio: Android Studio provides a unified environment where you can build apps for Androidphones, tablets, Android Wear, Android TV, and Android Auto. Structured code modules allow you todivide your project into units of functionality that you can independently build, test, and debug.

IV. Industrial Survey

Survey: When we were asked to think about a relevant topic for our final year project, we thought of Many topics and after we came across the topic image color detection Before going into the speculations of the project it is important to know the definition of color detection, It is simply theprocess of identifying the name of any color. When we conducted a brief poll at that point, questioning our family, friends, close friends, neighbours, and a few other people about their experiences, we discovered that it is clear that humans carry out this behaviour spontaneously and without exerting any effort. Nevertheless, this is not true of computers. It is true that since early drawing programmes, humans have labelled some lights with their respective colour designations. The same method works well in this project to find colornames.

V. PROBLEM IDENTIFIED

Although, many problems were solved by startups of such platforms, through our survey we found major issue which the society is currently facing. problem is that: Many of these apps were paid and the apps which were free would ask for membership to use their more features. It would provide free users only limited features, and major problem was of some apps were only available with specific language which gave problem to the user who didn't understand the language. In such case, we felt that if we come up with a platform which provides free app with more features and in English language with free of cost, it will become much easier and convenient for the user to use the app, and would be user friendly. We did a little more survey to find out if there is a platform resolving this issue, but to the best of our knowledge, we could find only one mobile application which when tried, wasn't responding well and hence of not any use to the society. This made us convince ourselves that developing an Image color detection model for commute platforms, shall be of a good help for the society as well. That's when we thought that we shall take up Image color detection as our final year project.

VI. FLOWCHART
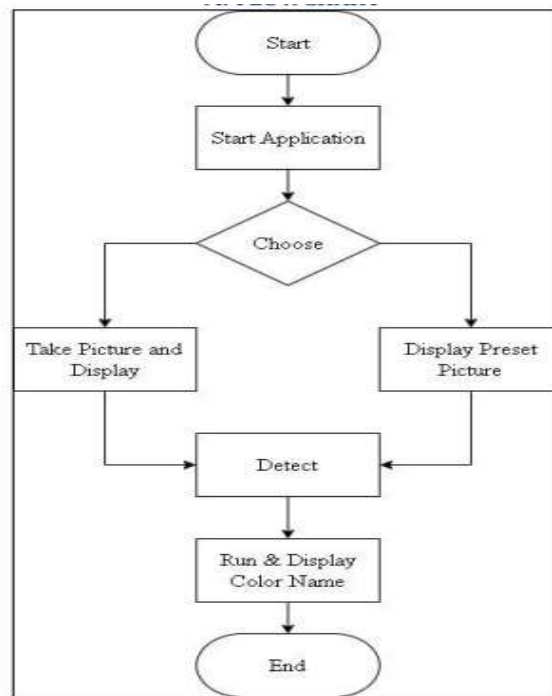
VII. CONCLUSION

Color detection technology has come a long way and has a long way to go. When we see self drive cars running on roads by themselves following the traffic rules. Today, the machines are ready to for it. Tesla is a frontrunner in this technology. However, next-generation color detection programs will have more upgradations. The apps in smart environments - where computers and equipment are similar to assistant assistants. To achieve this goal computers must be able to reliably identify nearby things and their basic properties like size shape and color(we can't forget that) in a manner that is naturally consistent within the normal human pattern. They do not require special interactions and should be in line with people's understanding of when recognition goes. This suggests that future intelligent environments should use the same methods as humans, and have the same limitations. These goals are now achievable.

VIII. REFERENCES

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